

WOOLF et al. — Appln. No. 09/778,956

REMARKS

Claims 1 and 9 have been amended to remove an unnecessary word from the preamble. Claims 24-41 are new. Claims 1-41 are pending. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Applicant notes with appreciation the Examiner's withdrawal of the prior art rejection.

Objection to the Specification Under 35 U.S.C. § 132

The specification was objected to under 35 U.S.C. § 132. Specifically, the Office Action alleged that the January 9, 2004 amendments to the specification at page 11 introduced new matter. While applicants respectfully disagree, applicants have amended the specification at page 11 to cancel the January 9, 2004 amendments and restore the original language. This paragraph has also been amended to correct a typographical error. Accordingly, Applicants respectfully request withdrawal of this objection.

Claim Rejections Under 35 U.S.C. § 101

Claims 1-23 were rejected under 35 U.S.C. § 101. Specifically, the Office Action alleged that claims 1-23 are directed to non-statutory subject matter as defined in M.P.E.P. 2106. For at least the reasons below, applicants respectfully traverse this rejection.

Claim 1 recites, *inter alia*, "receiving sets of expression data derived from control and treatment sets of cell-derived samples as crisp input data, said sets of expression data representing a direction and a magnitude of regulation of each one of a higher number of different genes or proteins," and "fuzzifying the crisp input data to provide fuzzified values."

The Examiner asserts that "the receiving of data does not cite or require the transformation of measurements of physical objects or activities outside the computer. It is only data receiving." Applicants respectfully note that out of the entire first element of applicant's claim 1, the Examiner is acknowledging only two words. Moreover, this conclusion also ignores the subsequently recited operations such as fuzzifying of the data.

For the Examiner's consideration, applicants respectfully note the following method claim, which was deemed by the Federal Circuit to be patentable under section 101 in Arrhythmia Research Technology Inc. v. Corazonix Corp., 958 F.2d 1053, 22 USPQ2d 1033 (Fed. Cir. 1992):

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1. A method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high frequency energy in the late QRS signal, comprising the steps of:
 - converting a series of QRS signals to time segments, each segment having a digital value equivalent to the analog value of said signals at said time;
 - applying a portion of said time segments in reverse time order to high pass filter means;
 - determining an arithmetic value of the amplitude of the output of said filter; and
 - comparing said value with said predetermined level.

This claim may also be readily recognized as the basis for the very first example of statutory subject matter that is presented under the second heading of MPEP 2106.IV.B.2(b)(i) ("Manipulation of Data Representing Physical Objects or Activities (Pre-Computer Process Activity)").

Applicants respectfully note that if the analysis proposed in the current Office Action were applied to this Arrhythmia claim, then it would be said that this claim is unpatentable because it merely recites "signal converting." Clearly, such a conclusion would be incorrect, as the claim explicitly recites converting not of just any signal but of a QRS signal, i.e. a signal representative of human cardiac activity. Such a conclusion would also be contrary to the binding decision of the Federal Circuit, which specifically held that this claim comprises statutory subject matter (22 USPQ2d at 1038). Additionally, by citing this claim as the first example of this principle as noted above, the USPTO has also expressly taken the position that this claim affirmatively recites "Manipulation of Data Representing Physical Objects or Activities (Pre-Computer Process Activity)."

Even more explicitly than the recitation of "QRS signals" in the Arrhythmia claim set forth above, applicant's claim 1 recites performing operations on "sets of expression data representing a direction and a magnitude of regulation of each one of a higher number of different genes or proteins." It cannot reasonably be asserted that this claim fails to recite "Manipulation of Data Representing Physical Objects or Activities," for the claim explicitly states that the data represents gene regulation.

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Therefore, Applicants submit that the subject matter of claims 1-23 is statutory as required under 35 U.S.C. § 101. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claim Rejections Under 35 U.S.C. § 112

Claims 1-15 were rejected under 35 U.S.C. § 112, second paragraph. Specifically, the Office Action alleges that the preamble of the claim recites differential expression but that there is no differential practice in the claim. Applicants have amended claims 1 and 9 to remove reference to the term "differential". Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

New Claims

Claims 24-41 recite methods of analysis as set forth in the specification as originally filed (e.g. pages 3-5). Applicant respectfully submits that these claims are allowable at least for the reasons set forth herein.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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